Oats

Background for 1990 Farm Legislation

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Introduction

Oats are grown in most crop-producing areas of the United States, but commercial production is concentrated in the North Central States. Oats have declined rapidly in importance since the mid-1950's when over 40 million acres were harvested. The acreage harvested for grain has recently ranged from 6 million acres to 10 million acres, about 2-3 percent of all principal cropland harvested.

Oats' value of production ranked 16th among major field crops in 1987, at $606 million. Corn, soybean, hay, and wheat crops were valued at $14.0, $11.3, $9.0, and $5.5 billion, respectively. Oats are less important as a cash crop since a large proportion of annual production is used for livestock feed and seed on the farms where produced.

The principal domestic use of oats is for livestock feed, although it has recently become a specialty feed for race and pleasure horses. The amount used varies from year to year in response to changes in the relative price and supply of oats compared with other feed grains, principally corn and sorghum. Oats are a preferred feed ingredient for horses and mules. Many dairy farmers prefer to include oats in rations for breeding animals and young stock because of the high fiber content. Other grains are preferred in most livestock feeds, because oats are lower in starch content. However, oats are added to rations for their energy content, if oats are competitively priced with corn. Although oats have a higher protein content than corn, oilseed meals and grain byproduct feeds are more economical sources of protein. Thus, oats are used mainly in rations where additional fiber is needed.

Human consumption of oats has begun to grow, after a long period of stability. After the recent discovery of oats' health attributes, increased preferences for oats food products are contributing to its growth. Any increase in consumption in the past was tied chiefly to growth in population.

Exports have been the smallest and most unstable component of annual oats consumption. Export shipments of oats declined from a record 57 million bushels in 1973/74 to only 1 million bushels in the past several years.

World trade in oats is highly variable and the quantity traded is small relative to other feed grains such as corn. The United States and other nations such as Canada, Argentina, Sweden, Finland, and Australia produce primarily for their domestic market, but some have recently boosted production because of the shortfall in U.S. production. Since the mid-1980's, the United States has become the largest importer of oats.

Annual production of oats is out of balance with domestic needs. Feed sources consumed an average 324 million bushels in the past 3 years, 1986-88, while food and seed uses averaged 79 million bushels, totaling 403 million bushels. However, production has averaged only 326 million bushels.

The Food Security Act of 1985 permitted loan rates to be lowered to more closely reflect market prices. The common base for oats and barley was permitted to continue. Land that could have produced oats has been attracted to more generous program crops, such as barley or corn, or to the conservation reserve program. Despite a reduction in the acreage reduction program requirement and the removal of cross-compliance, oats production has not been able to keep pace with domestic consumption. Thus, domestic processors must seek foreign oats supplies. A return to favorable weather and a provision of the Drought Assistance Act of 1988 that allows producers to plant any portion of their farm acreage base to oats should accommodate greater oats production in 1989.

Structure of the Oats Industry

Substantial structural changes have occurred in the oats industry in recent years. The number of farms producing oats has declined and the larger farms (50 or more acres harvested per farm) are producing a larger proportion of production (table 1). Farms producing oats for grain with sales of $2,500 or more numbered 463,000, 326,103, and 280,884 in 1969, 1978, and 1982. The number of farms producing oats declined by 39 percent between 1969 and 1982. Although grain consumption levels for feed have declined, the human food component of oats has begun to rise due to increased consumer awareness of oat's health benefits, necessitating a rise in processor capacity. World trade levels are minimal because oats are usually a domestic-oriented industry.

Production Characteristics

Oats, grown throughout the United States (fig. 1), are used for grain, pasture, forage, or as a companion crop or cover crop. White oats are usually grown in northern regions because they thrive in a cool, moist climate. Although popular as a livestock feed, white oats are also used by the oats milling industry for processing into food products. Red oats are grown in areas too warm for satisfactory growth of white oats, such as the South or west coast. The red type is often used for winter pasture of livestock and later harvested for grain. In recent years,

Table 1--Relative importance of oats on U.S. farms, by major producing States, 1978 and 1982

Year/ State	Farms with harvested cropland	Cropland harvested per farm	Farms harvesting oats for grain	Acres of oats harvested per farm	Share of farms harvesting oats	Share of cropland harvested for oats
	Thousands	Acres	Thousands	Acres	- - - Percent	- - -
1978:						
Iowa	111	212	40	22	36.0	3.7
Michigan	60	118	19	22	31.7	5.9
Minnesota	99	207	47	14	47.5	8.7
North Dakota	40	494	16	70	40.0	5.7
Ohio	83	124	20	15	24.1	3.0
Pennsylvania	52	81	21	15	40.4	7.2
South Dakota	35	394	23	87	65.7	14.1
Wisconsin	81	121	52	21	64.2	11.1
Eight States	561	190	238	28	42.4	6.2
United States	1,905	166	326	32	16.8	3.2
1982:						
Iowa	104	233	35	23	33.7	3.3
Michigan	59	229	17	24	28.8	5.5
Minnesota	94	229	39	33	41.5	6.5
North Dakota	36	597	13	74	36.1	4.7
Ohio	78	133	18	17	23.1	2.9
Pennsylvania	50	87	19	16	38.0	7.0
South Dakota	33	440	20	92	60.6	12.5
Wisconsin	76	133	41	22	53.9	8.9
Eight States	530	209	202	34	38.1	6.1
United States	1,810	180	281	33	15.5	2.8

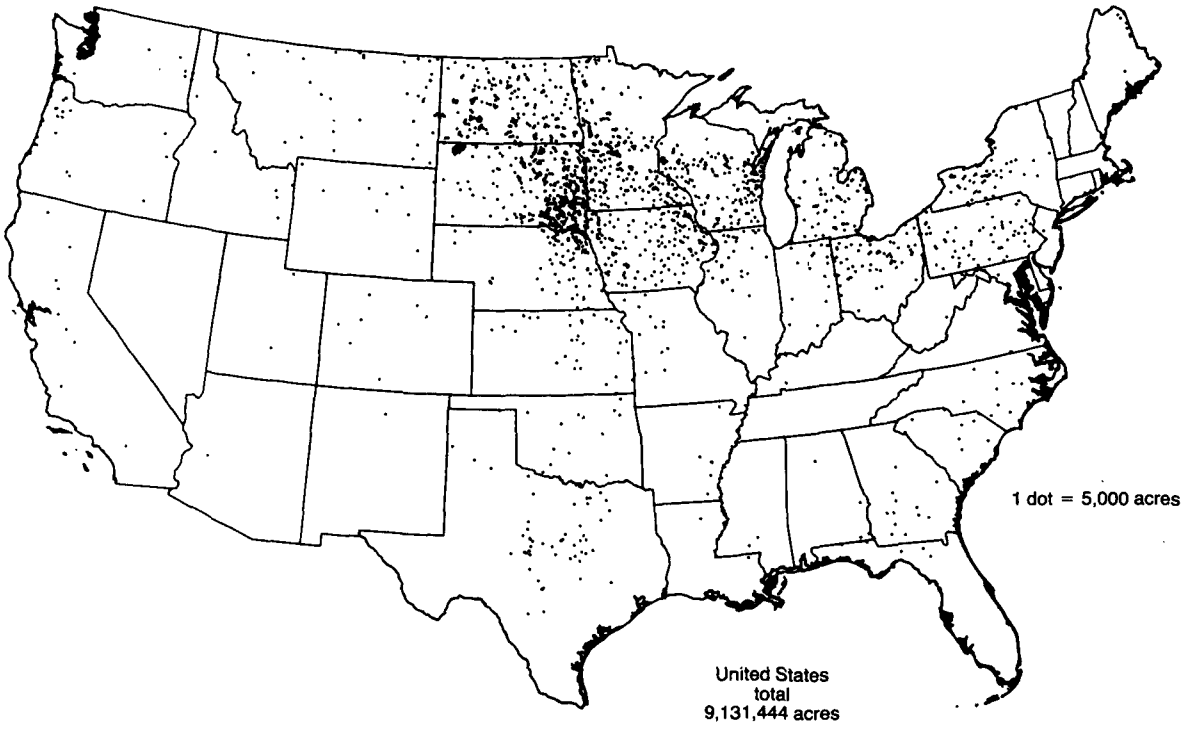
Source: 1978 and 1982 Censuses of Agriculture, U.S. Department of Commerce.

genetic crosses between the two types of oats have made some red oats more like the popular white oats.

The acreage of oats harvested for grain has totaled about 5.6 million acres to 6.9 million acres during the last 3 years, down from about 41 million acres in the mid-1950's. Production is currently concentrated in the Lake States and Northern Plains where the crop competes with barley, wheat, and sunflowers for

Figure 1

Location of oats harvested for grain in the United States, 1982

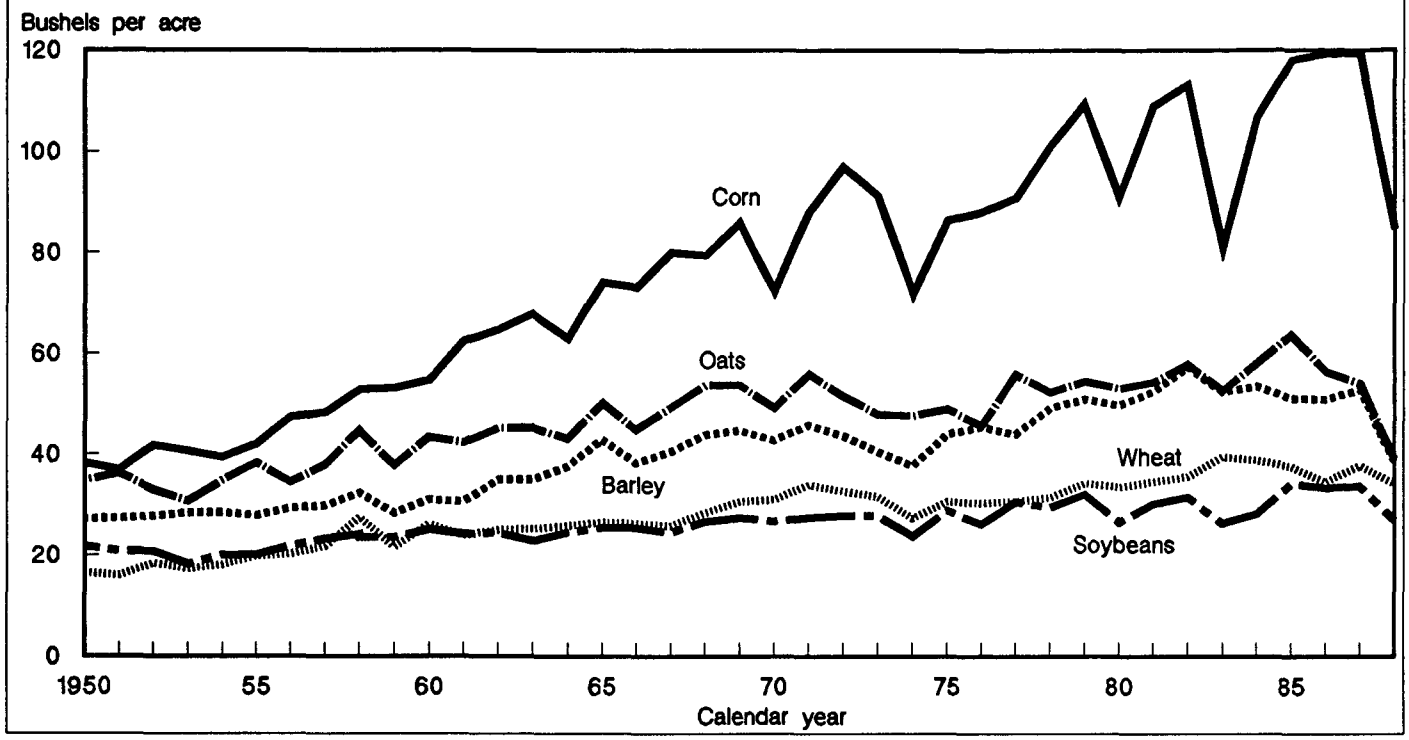


available cropland. Soybeans and corn have replaced oats throughout much of the Corn Belt, reflecting both the greater profit potential for soybeans and corn and a shift from livestock to cash grain farming in this region. Many producers who continue to grow oats are involved in livestock production.

Despite a major shift in oats production from the Corn Belt to the Northern Plains, grain yields rose during 1950-87 by an annual average of 0.5 bushels per acre (fig. 2). Oats yields increased from 34.8 bushels per acre in 1950 to a record 63.7 bushels in 1985. Yields declined in 1986, 1987, and 1988 due to weather-related difficulties such as a wet spring or a dry growing season. The increase in oats yields between 1950-87 is tied for last among the feed grains, wheat, and soybeans. Yields for corn, sorghum, wheat, barley, oats, and soybeans rose by an annual average of 5.6, 5.5, 3.4, 2.5, 1.5, and 1.5 percent, respectively.

The relatively low yield gain for oats is due to several factors. Irrigation is not a common production practice compared with corn. Commercial fertilizer is used on only 35-40 percent of the harvested acres. Oats acreage has shifted from high- to low-quality land in the Corn Belt and Great Plains regions due to the expansion of soybean and wheat acreage. And, oats' decline as a major feed grain has led to reduced research on plant breeding and production practices. Only one private company currently conducts oats breeding research, while at least one other company provides funds for similar research to selected Land Grant

Figure 2
Yield per acre, major crops



Universities. Perhaps the future level of research activity could increase, given the renewed interest in oats' food use.

Cropland planted to oats declined by an annual average of 712,763 acres per year between 1950 and 1987. Planted acres reached a plateau in the mid-1950's, averaging about 44 million acres, then declined sharply to a low of 12.4 million acres in 1984. Acres planted to sorghum and barley also trended downward during this period. In contrast, acres planted to wheat and soybeans rose by 449,000 acres and 1.7 million acres per year. Corn acreage was fairly constant from 1950 to 1960, but increased significantly from 1961 to 1987. Oats planted for harvest competes with barley, wheat, soybeans, corn, and sunflowers for available acreage.

Factors partially responsible for the decline in oats acreage are the decline in profitability in relation to other cash crops such as soybeans or corn, the decline in oats' use as a feed ingredient, the decline in use within a crop rotation, and the increase in farm enterprise specialization for both crops and livestock. For example, the increased use of corn and soybean meal in livestock rations has contributed to the decline in oats' feed use. A rise in the use of herbicides has lessened the need for oats in crop rotations. The use of large-scale machinery enabled producers to avoid the spring labor constraint, thereby reducing the need for oats. In some areas, profitability of growing soybeans compared with oats has contributed to a change in cropping patterns.

Government programs recently discouraged production of oats. Since 1982, the program acreage bases for oats and barley have been combined into a common oats and barley acreage base. On this base, a producer could plant any combination of oats and barley on the permitted acreage. The result has been to reduce oats acres harvested in favor of barley. This shift in acreage was due to higher returns of barley production resulting, in part, from Government programs. The Food Security Act of 1985 has reduced oats production through the conservation reserve program, which removes the least-productive land from harvested acreage. In many instances, this land had been planted to oats.

Based on recent oats consumption levels and expected increases in specialty feed and food uses, oats acreage harvested for grain should increase and range between 8 and 10 million acres by the mid-1990's. Yields may increase slightly and average about 58 bushels per acre during this period. Production is expected to range from 464 to 580 million bushels during 1991-95. In order to achieve this production, changes would be needed in the present set of farm programs so that producers can better respond to market price signals. Without such changes, this production level appears unlikely and processors would have to rely upon imports.

In 1982, the 281,000 farms harvesting oats represented 15.5 percent of the 1.8 million U.S. farms with harvested cropland (table 1). Almost three-fourths of those farms were in the eight leading oats-producing States. The share of harvested cropland devoted to oats production in those States ranged from 3 percent in Ohio to 13 percent in South Dakota. Oats accounted for about 3 percent of the Nation's harvested cropland.

Average acreage of oats harvested per farm in the eight leading States ranged from 16 acres in Pennsylvania to 92 acres in South Dakota. Oats are a supplemental crop grown to meet special needs such as farm feeding, a local oats market, or rotational purposes. Government programs that affect the oats industry would have the greatest effect on farms in North and South Dakota.

Since payments are proportional to the production base, the distribution of program payments among oats producers depends to a large extent on the proportion of total production controlled by larger producers. In 1982, 49,665 oats producers harvested 50 acres or more (table 2). Thus, about 17-18 percent of all producers would receive about 52-54 percent of the benefits.

The tenure system for farmers growing oats for grain ranged from full owners to tenants and changed only slightly between 1978 and 1982. Full owners accounted for 43 percent of all farms and 32 percent of the production in 1982, compared with 45 percent of all farms and 33 percent of production in 1978. Part owners accounted for 45 percent of all farms and 56 percent of all production in 1982, up slightly from 1978. The remaining 12

Table 2--Number of oats-producing farms and production by size group, 1978 and 1982

Year/acres of oats harvested for grain	Oats-producing farms		Oats production	
	Number	Percent	1,000 bu.	Percent
1978:				
1-14	125,944	38.6	52,896	10.2
15-24	73,938	22.7	73,596	14.2
25-49	70,980	21.8	125,298	24.1
50-99	36,266	11.1	119,406	23.0
100-249	16.785	5.1	110,080	21.2
250-499	1,890	.6	27,895	5.4
500 or more	300	.1	9,673	1.9
All farms	326,103	100.0	518,844	100.0
1982:				
1-14	106,272	37.8	47,149	9.3
15-24	63,224	22.6	65,784	13.0
25-49	61,723	22.0	117,276	23.2
50-99	31,875	11.3	116,202	23.0
100-249	15,793	5.6	117,073	23.3
250-499	1,666	.6	29,092	5.8
500 or more	331	.1	12,279	2.4
All farms	280,884	100.0	505,855	100.0

Source: 1978 and 1982 Censuses of Agriculture, U.S. Department of Commerce.

percent of farmers were tenants, accounting for 11 percent of total oat grain production, about the same as in 1978.

Trends in Domestic Use

The relative importance of alternative uses and the marketing process of oats are illustrated in figures 3 and 4. The quantity of U.S. oats consumed as grain has steadily declined since the 1950's. Most of the reduction in use has been in onfarm feeding. Despite this decline, about 60 percent of U.S. oats production is consumed on the farms where produced. The consumption of oats by off-farm feed sources such as feed manufacturers or livestock and poultry producers has also declined, but less severely than onfarm use. In recent years, feed use of oats accounted for 71-83 percent of total disappearance, down from 90 percent in 1950 (fig. 4). Food use of oats has been a small and steady component of consumption but recently has risen to 15-25 percent of total

Figure 3
U.S. oats consumption

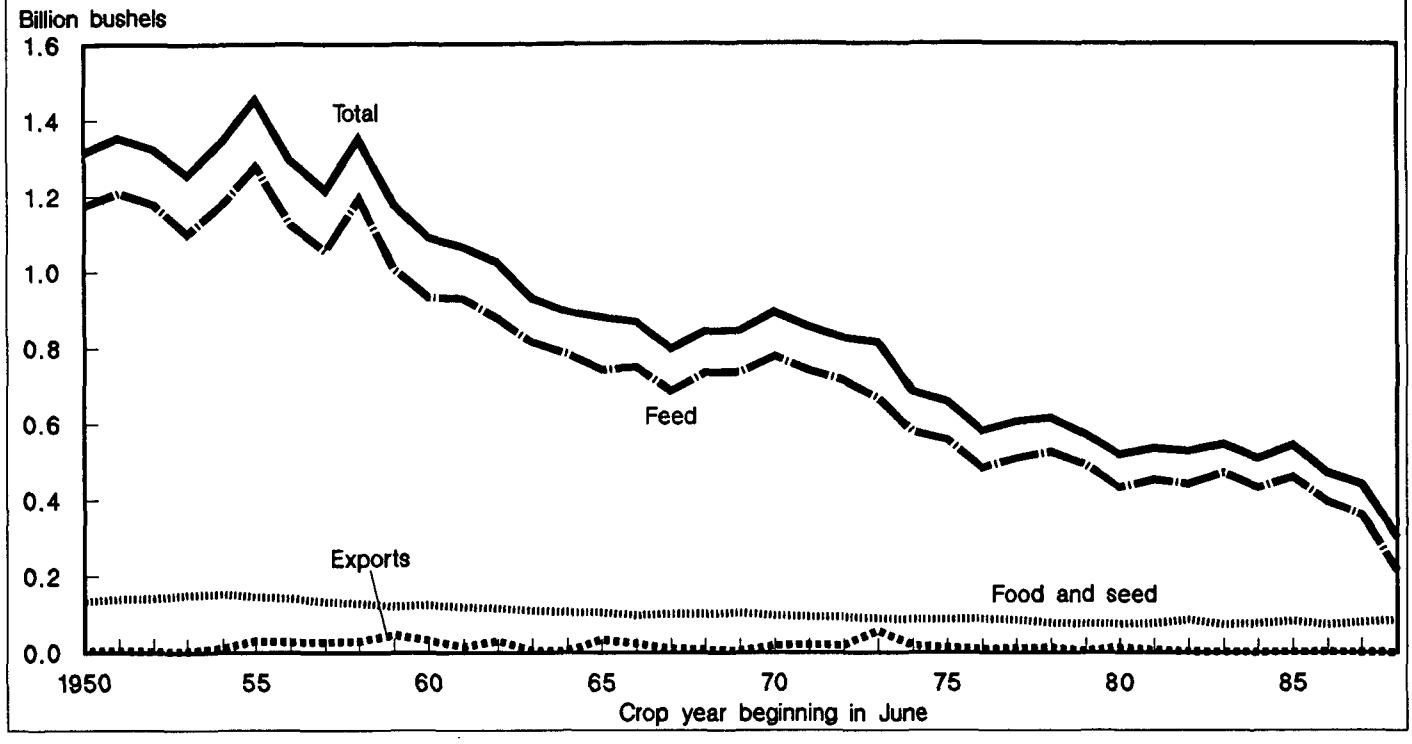
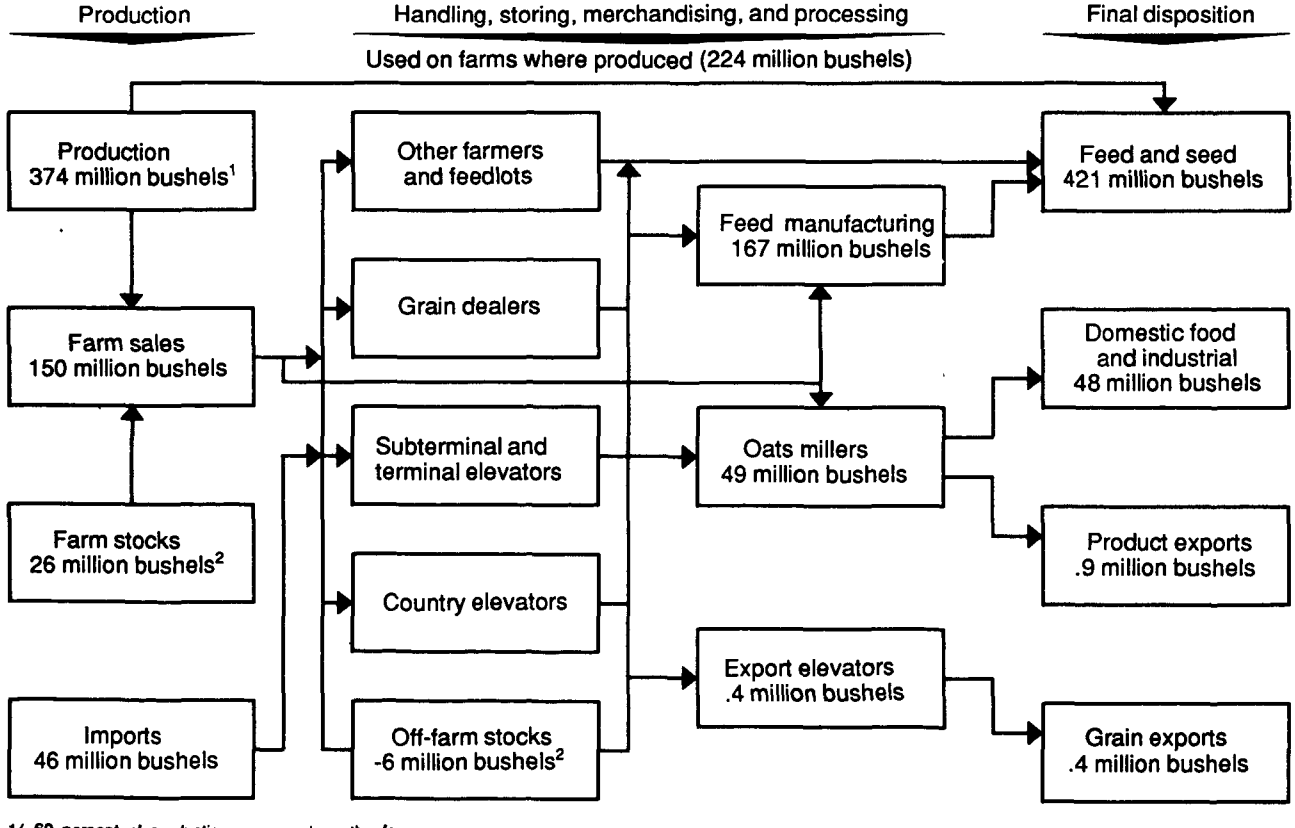


Figure 4
The U.S. oats marketing process, 1987-88



1/ 60 percent of production was used on the farm.
2/ Change between beginning and ending stocks.

consumption. Seed use has declined with the drop in acreage planted. Exports of U.S. oats have been relatively small and highly variable.

Feed

The feed manufacturing industry has been a major user of oats. Feed use of oats in the 1980's (both onfarm and off-farm) ranged from 215 million bushels to 466 million bushels, less than 50 percent of that fed in the 1950's. In 1984, the industry used about 1.5 million tons of oats in manufacturing animal feeds. This was substantially less than the 32.2 million tons of corn used by the industry and the smallest quantity of the four major feed grains. Oats represents about 3.3 percent of the whole grain processed by feed manufacturers in 1984, down from 5 percent in 1975.

Oats are principally fed to dairy cattle, horses, mules, replacement layers, and turkeys, with lesser quantities fed to hogs, beef cattle, and sheep. Bulky and high in fiber, oats are an excellent conditioning feed for horses and cattle (especially breeding stock) because oats form a loose mass in the stomach. Some grains, such as wheat, pack the stomach and cause digestive disorders. Oats have more protein than corn, but the energy value is less. Therefore, oats are not as beneficial as corn in finishing or fattening animals, but oats are an excellent starter ration for some animals such as dairy cattle or hogs. Also, oilseed meals and byproduct feeds are more economical sources of protein than oats. As a result, oats are primarily used as a fiber feed.

Competition among feed ingredients depends on relative prices and relative feed value. Values for oats on a bushel-for-bushel basis differ from a pound-for-pound basis because of the differences in legal weights per bushel (56 pounds for corn and sorghum and 32 pounds for oats). Average feed values for major grains averaged across all livestock classes within a reasonable range of balanced rations are presented below:

	Pound for pound	Bushel for bushel
	Percent of corn's feed value	
Corn	100	100
Sorghum	95	95
Barley	90	77
Oats	90	51
Wheat	105	113

Feed use of oats used to be positively related to the number of grain-consuming animal units (GCAU). However, this relationship no longer appears to exist. For example, between 1975 and 1988, oats used as livestock feed declined from 8.1 million metric tons to 3.1 million metric tons, while GCAU's rose from 72.6 million

units in 1975 to 79.3 million units in 1979, but then declined to 76.4 million units in 1988 (table 3).

The primary reason why this relationship no longer holds is that oats prices are beginning to exceed their feed value, especially since September 1986. There are several reasons for this change in relationship. The corn price level was reduced in September 1986 as the Food Security Act of 1985 permitted loan rates to be lowered and generic certificates to be used. Oats production has declined and prices have risen as the returns per acre to producers are not as great as for many competing crops. Accordingly, oats have rapidly become a specialty feed for mostly race and pleasure horses. Regular feed use of oats has declined as other feed ingredients are more readily available and cheaper.

Food

Food use of oats has recently begun to increase due to the widespread knowledge of the health benefits associated with oats consumption. Food consumption had been a stable component of oats disappearance, ranging in absolute value from 32.8 million bushels in 1953 to about 90 million bushels in 1989. The food component's proportion of total consumption grew from 2.4 percent in 1955 to a projected 17 percent in 1988. In recent years, the per capita consumption of oats was slightly above 3 pounds per year, much less than the 114-120 pounds per year for wheat. Food consumption of oats depends more on population and tastes and preferences than on price. The food processing industry is expected to process 90 million bushels of oats in 1989/90 and 130 million bushels by 1991/92, according to industry sources. Unlike other small grains, the oat hull is firmly attached to the kernel and can be removed only by milling. Once the hulls are removed, the kernel is processed into several edible products including rolled oats, steel-cut oatmeal, ground oatmeal, and instant oats. The hulls removed in the milling process are sold to the feed manufacturing industry.

Oats food products include oatmeal, oat flour, natural cereals, meat product extenders, cookies and breads, granola, oat bran, and baby food. Oats flour is used in certain cosmetics and cereal applications and as an antioxidant in food products. Oats are principally consumed as a breakfast food or snack product. Although published data are not available, industry sources estimate that 50 percent of the total is used as standard oatmeal, 35 percent as instant oatmeal, 5-10 percent as oat flour, and 5-10 percent as snack products.

Recent medical research has shown that certain fibrous plant materials in the diet can lower serum cholesterol concentrations. The fibers, however, must be water soluble. Oat bran is water soluble, but wheat bran is not. Water-soluble dietary fibers also lower post-meal blood glucose levels in insulin-dependent diabetics.

Table 3--Feed use and animal numbers, marketing years, 1975-88

Item	Unit	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89 1/
Feed and residual use:															
Oats	Mil. m.t.	8.1	7.0	7.4	7.6	7.1	6.3	6.6	6.4	6.8	6.3	6.7	5.7	5.2	3.1
Barley	do.	4.1	3.8	3.9	4.7	4.4	3.8	4.3	5.2	6.2	6.6	7.2	6.5	5.6	5.2
Sorghum	do.	12.6	10.4	11.4	13.7	12.6	8.2	10.6	12.6	9.8	13.7	16.9	13.6	14.3	13.1
Corn	do.	91.2	91.2	94.4	108.3	115.6	105.6	105.9	114.8	97.0	103.6	104.0	119.7	120.3	109.2
Total feed grains	do.	116.0	112.1	117.1	134.3	139.7	123.9	127.4	139.0	119.8	130.2	134.8	145.5	145.4	130.6
Wheat and rye	do.	1.7	6.8	4.5	3.3	2.8	4.4	3.9	5.5	10.3	11.4	7.6	11.6	8.3	7.6
Total grains	do.	117.7	118.9	121.6	137.6	142.5	128.3	131.3	144.5	130.1	141.6	142.4	157.1	153.7	138.2
Byproduct feeds 2/	do.	33.8	31.0	33.8	37.8	38.3	36.2	33.7	34.5	33.4	37.6	36.1	36.9	38.7	37.4
Total grains and byproduct feeds	do.	151.5	149.9	155.4	175.4	180.8	164.5	165.0	179.0	163.5	179.2	178.5	194.0	192.4	175.6
Animal numbers:															
GCAU 3/	Mil. units	72.6	74.1	75.7	78.3	79.3	77.6	74.3	76.4	75.9	76.5	74.4	74.2	76.6	76.4
Prices:															
Corn	Dols./bu.	2.54	2.15	2.02	2.25	2.48	3.12	2.47	2.55	3.21	2.63	2.23	1.50	1.94	2.55
Sorghum	do.	2.37	2.03	1.82	2.01	2.35	2.91	2.24	2.47	2.74	2.32	1.93	1.37	1.70	2.35
Barley	do.	2.42	2.25	1.78	1.92	2.27	2.79	2.48	2.18	2.47	2.29	1.98	1.61	1.81	2.80
Oats	do.	1.46	1.56	1.09	1.20	1.33	1.72	1.88	1.49	1.62	1.67	1.23	1.21	1.56	2.67
Wheat	do.	3.56	2.73	2.33	2.97	3.80	3.99	3.69	3.45	3.51	3.39	3.08	2.42	2.57	3.72
Feeding rate: 4/	M.t./GCAU	2.09	2.02	2.05	2.24	2.28	2.12	2.22	2.34	2.15	2.34	2.40	2.61	2.51	2.30

1/ Estimated.
2/ Byproduct feeds include oilseed meals, animal protein feeds, grain protein feeds, and other byproduct feeds.
3/ Grain-consuming animal units (GCAU) are a weighted average of the number of livestock and poultry fed during the feed year converted to feed unit equivalents.
4/ Total grains and byproduct feeds per GCAU.

Thus, oat bran or whole oats is beginning to play a larger role in improving health through diet. Oats consumption by humans appears to be increasing, as U.S. diets seem to be shifting toward cereal-based foods and away from fatty, high-protein, animal-based foods.

Seed

Seed use is a relatively small proportion of total disappearance, ranging from 7-9 percent of annual disappearance during 1950-88. Since the mid-1950's seed use has decreased due to the decline in acres planted. The aggregate seeding rate ranges from 2-3 bushels per acre. Seeding rates differ depending upon the crop's intended use.

Exports

Oats exports have been a low-volume component of total disappearance. Quantities exported have ranged from 1 million bushels to 56.7 million bushels during 1950-88. Recently, the proportion of total disappearance was less than 1 percent. Oats exports are unlikely to increase until domestic supplies become more ample.

Trends in World Trade

World oats trade averaged 1.4 million metric tons (includes intra-European Community-12 trade) each year between 1960-88 with a range of 1-2 million metric tons, about 2-4 percent of world production. Most countries produce oats for their domestic market. Higher U.S. prices have recently encouraged some additional foreign production for grain. The extent of trade also depends on the availability of other feed grains in the world market. Oats are less likely to be traded than other grains because their light weight per unit volume characteristics make transport costs expensive relative to the commodity's value. However, food use and specialty feed uses appear to justify some of the current levels of world trade.

Major oats-exporting countries have been Sweden, France, Australia, Finland, Argentina, United States, and Canada (table 4). Together, these countries exported an annual average of 88 percent of the world's oats in 1980-88. Between 1960-88, exports from the United States, Australia, and Argentina declined, while exports from Sweden, Finland, Canada, and France increased. Exports as a share of production have been low for the larger producing countries, such as the USSR, United States, and Canada, but much greater (8-20 percent) for Australia, Sweden, Finland, France, and Argentina.

U.S. exports to the world market have been very small in the last 9 years, especially the last 4 (table 4). Higher U.S. prices, lack of available supplies, and a periodic stronger U.S. dollar have made U.S. exports less attractive. The U.S. market share of world oats exports averaged 16 percent in the 1960's, rose to 22 percent during 1970-74 when the Soviet Union imported a large

Table 4--World oats trade by major trading countries

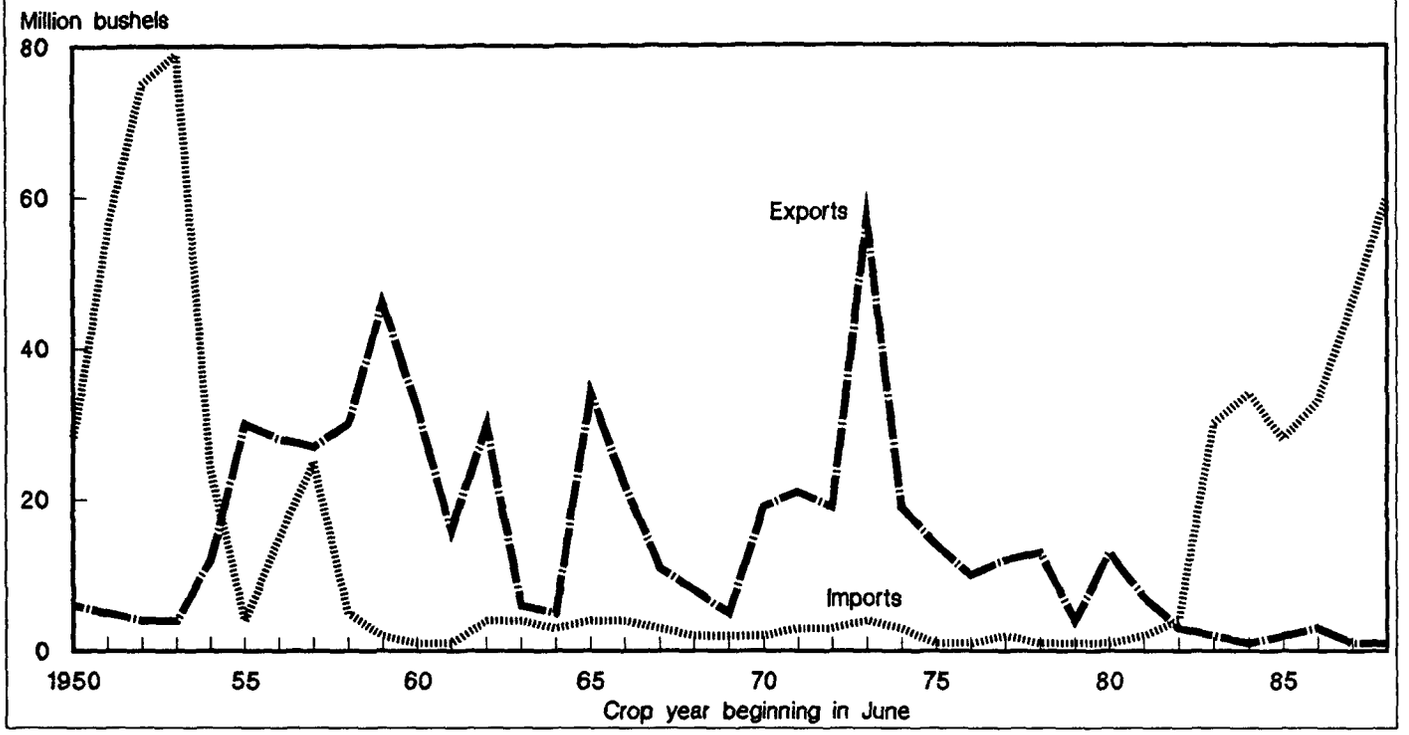
Country	Average market share					
	1960-64	1965-69	1970-74	1975-79	1980-84	1985-88
			Percent			
Exporters:						
Canada	13.0	8.7	6.1	13.1	5.4	20.5
Sweden	6.3	11.3	15.5	10.4	24.1	19.1
Australia	25.0	22.5	18.6	16.3	15.6	18.9
France	1.6	8.3	8.9	13.3	20.7	13.8
Argentina	22.2	16.1	9.3	15.0	6.7	8.0
Finland	.2	.7	4.8	2.0	10.1	5.8
United States	16.7	15.1	21.7	7.3	5.8	1.9
Other	15.0	17.3	15.1	22.6	11.6	12.0
			1,000 metric tons			
Total world	1,344.4	1,244.0	1,702.2	1,450.6	1,367.8	1,450.5
			Percent			
Importers:						
United States	3.2	3.4	1.4	1.5	17.9	44.6
Germany, Fed. Rep. of	30.8	39.8	31.0	26.8	16.9	10.5
Japan	.5	3.5	10.6	13.3	9.2	7.0
USSR	0	0	10.6	9.8	6.4	7.0
Switzerland	10.9	14.0	10.9	11.7	10.3	6.8
Netherlands	16.6	7.4	4.8	3.4	3.4	4.7
Belgium/Luxembourg	3.9	7.2	3.8	5.8	4.4	4.2
Italy	12.1	19.0	11.9	9.1	7.2	3.3
Other	22.0	5.7	15.0	18.6	24.3	11.9
			1,000 metric tons			
Total world	1,173.0	1,141.0	1,559.0	1,255.8	1,237.6	1,429.3

Source: U.S. Department of Agriculture, Foreign Agricultural Service, "Commodity Production, Supply, and Disposition Database." Unpublished monthly computer printouts, March 1988.

amount of U.S. oats, but dropped to an average 5 percent during 1980-85.

Most of the major U.S. grains depend upon exports to clear their market. In contrast, the export market for the U.S. oats industry has been relatively small in recent years (fig. 5). A surge in 1973 occurred because exportable supplies of oats were available and world supplies of competing grains were tight. In 1974, exports returned to the 1972 level of 19 million bushels. Oats exports have since declined to very low levels.

Figure 5
U.S. Oats imports and exports



The U.S. role in the world oats market has changed from net exporter to net importer, shifting after the 1982 crop year. The U.S. market share of world imports rose to an annual average of 45 percent between 1985-88, largest of all importing countries. Economic advantages, domestic agricultural policy, generally good feed quality, and a short domestic crop justify oats imports. Most of these imports have originated in Canada, Sweden, Finland, and Argentina. U.S. harvests in 1983 and 1986 through 1988 were less than expected due to weather conditions, and quality was adversely affected. For 1984-85, domestic oats production seemed adequate to handle domestic consumption, but the world economic environment created a situation whereby foreign oats could be imported into the United States at competitive prices. Traditional oats importing countries have been Japan, Federal Republic of Germany, Italy, Switzerland, the Netherlands, Belgium/Luxembourg, and the Soviet Union (table 4).

Variation in the annual volume of U.S. imports in the 1950-88 period is illustrated in figure 5. The importance of imports has been growing. Between 1950 and 1986, they were a small percentage of supply, 1-5 percent. However, the 46.3 million bushels imported in 1987 were equal to 9 percent of supply and for 1988 the expected 60 million bushels will equal 16 percent of supply. In the past, Canadian oats would enter the U.S. markets when U.S. prices rose above those of Canada. With the Canadian and U.S. free trade agreement, major changes are not anticipated in the importation of Canadian oats. However, as of August 1, 1989, the Canadians will remove the marketing of oats from their

Wheat Board and turn it over to private industry which would appear to ease the process of importing Canadian oats.

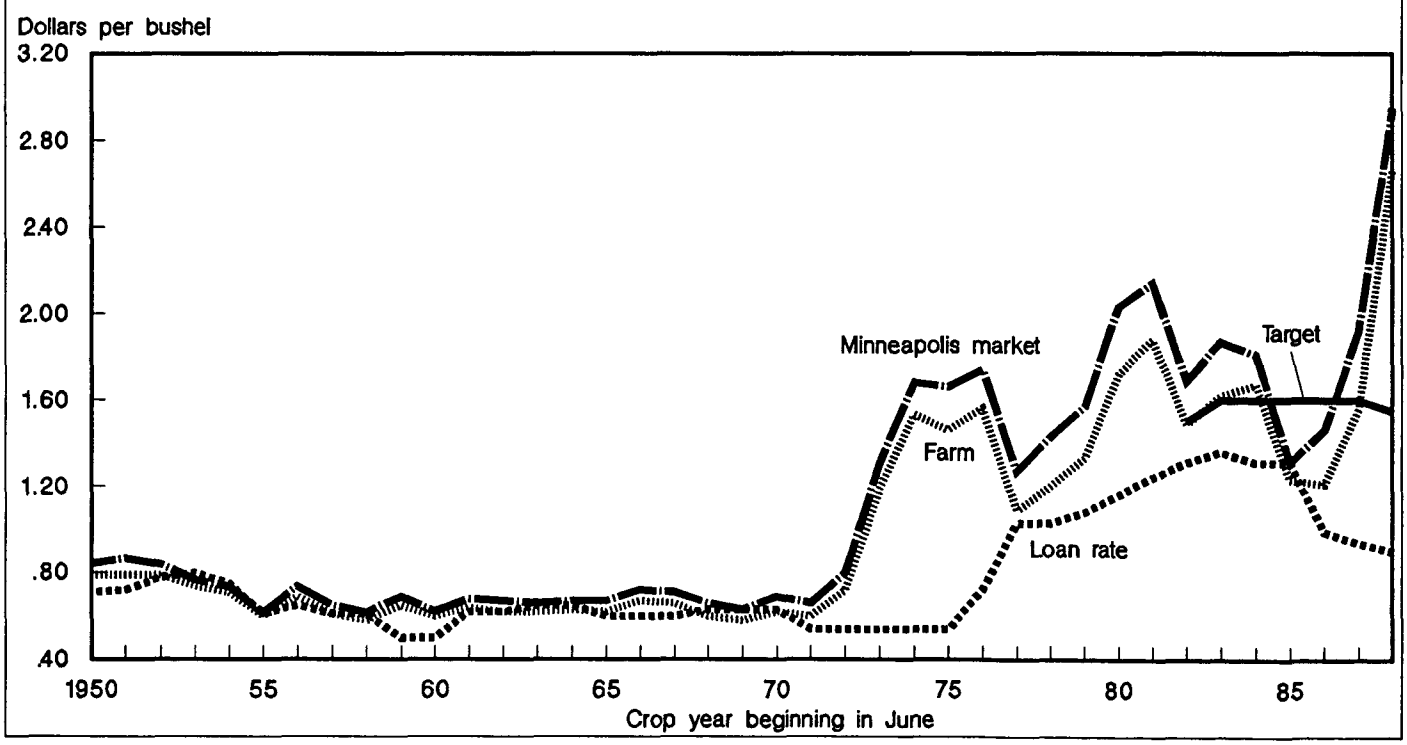
The relatively small quantities of oats traded in world markets, compared with other grains such as corn, and the large variability of trade volume suggest that the export market is not a dependable market for world oats producers. However, since U.S. prices have been strong, world producers have responded by increasing exports. Nevertheless, reliance on a thinly traded world market to compensate for U.S. crop shortfalls is risky but necessary.

Trends in Prices and Farm Returns

In the late 1950's and 1960's, average prices received by farmers for oats were very stable, ranging from 57.8 cents per bushel in 1958/59 to 66.6 cents in 1966/67 (app. table 3). These prices reflected the price support loan rate which ranged from 61 cents to 60 cents per bushel. A loan rate of 54 cents per bushel was in effect from 1971/72 through 1975/76. The loan rate had no bearing on market prices during this period because oats prices rose in response to high prices for corn and other grains (fig. 6).

The support price was raised considerably in 1976 and 1977, exceeding $1 per bushel for the first time in 1977. The higher rate appeared to moderate the sharp decline in market prices that occurred in the summer of 1977 (fig. 6). The growing export

Figure 6
Oats prices: Market, farm, loan rate, and target



demand for corn in the late 1970's resulted in higher corn prices. Oats prices followed the corn market but rose to $1.88 per bushel in 1981 due to a tight oats supply situation (fig. 6).

Loan rates for oats were lowered in 1986 through 1988 as a result of the Food Security Act of 1985. Rates dropped from $1.31 per bushel in 1985 to $0.99 per bushel in 1986 and declined to $0.90 in 1988. Despite the downward adjustment in support prices, market prices remained well above support levels primarily because of the tight supply situation.

The relatively tight supply situation for oats in the 1976, 1981, 1984, 1986, 1987, and 1988 marketing seasons strengthened oats prices relative to other feed grains and weakened the traditionally strong feed price relationship between market prices of corn and oats (fig. 7). In recent years, this relationship no longer holds since it has been much higher than 51.2 percent of corn's price. During 1988, the farm price received was projected to be $2.67 per bushel, slightly above the projected corn price of $2.50 per bushel. The drought of 1988 was devastating to the oats crop with production dropping to a record low of 219 million bushels.

Despite the alleged income protection provided by deficiency payments in the 1981 farm act, returns per bushel produced since 1981 have not kept up with the $0.96 per bushel level experienced in 1981, excluding 1988's return of $1.75 per bushel (table 5). Between 1982 and 1987, prices received by farmers were lower than

Figure 7
Oats/corn price relationships, monthly Minneapolis market

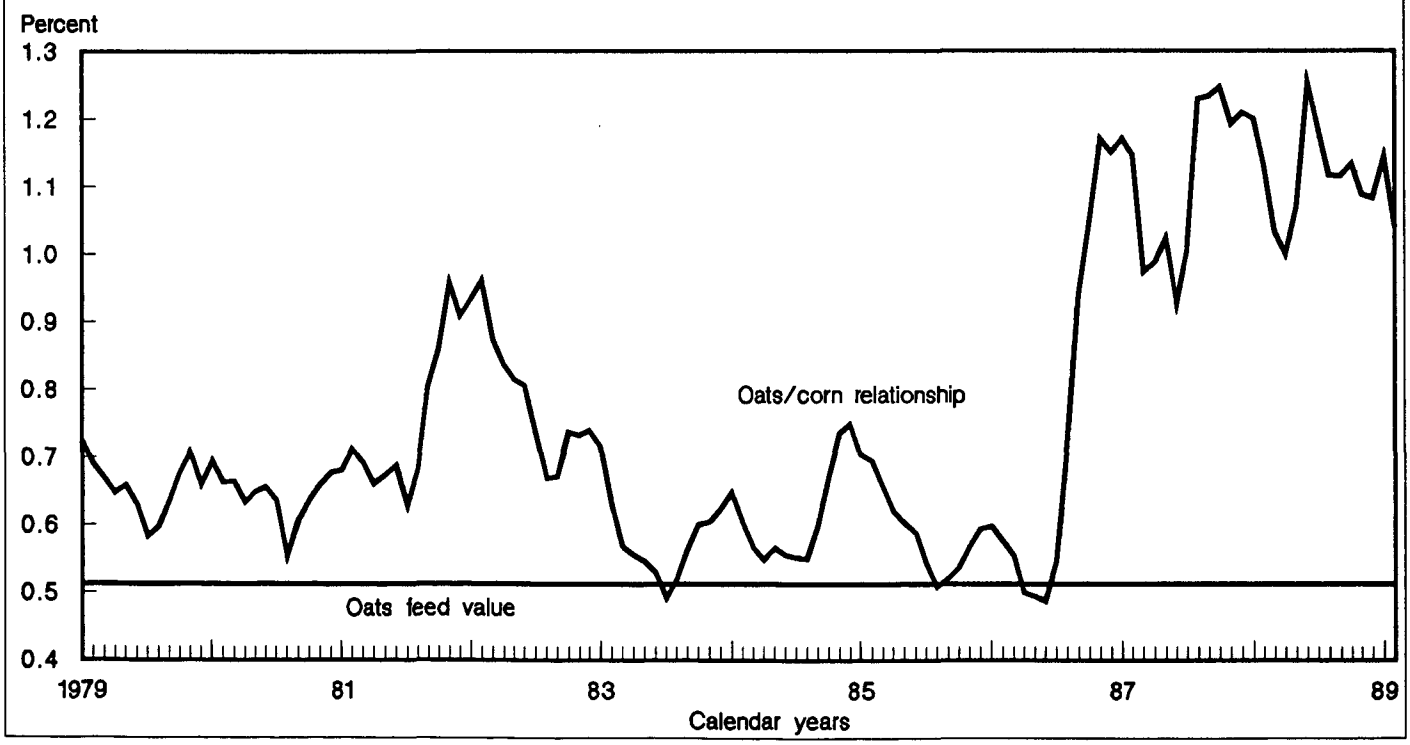


Table 5--Oats: Value of crop, expenses, and returns above cash expenses on acreage harvested for grain, 1975-88

Crop year	Value of products 1/				Total cash expense	Returns above cash expenses			
						Gross		Per bushel	
	Grain	Straw	Govt. pymts.	Gross		Nominal	$1982	Nominal	$1982
	Million dollars							Dollars	
1975	924	389	0.3	1,313.3	515	798.3	1346.2	1.25	2.11
1976	835	368	0	1,203.0	444	759.0	1202.9	1.40	2.22
1977	823	518	0	1,341.0	555	786.0	1167.9	1.04	1.55
1978	689	362	7.2	1,056.2	527	529.2	733.0	.91	1.26
1979	714	207	6.2	927.2	530	397.2	505.3	.75	.95
1980	813	236	2.7	1,051.7	585	466.7	544.6	1.02	1.19
1981	954	284	-2.5	1,235.5	747	488.5	519.7	.96	1.02
1982	883	261	.5	1,144.5	793	351.5	351.5	.59	.59
1983	794	216	5.9	1,015.9	679	336.9	324.3	.71	.68
1984	798	170	7.8	975.8	642	333.8	309.9	.70	.65
1985	646	195	.3	841.3	580	261.3	235.6	.50	.45
1986	471	139	17.9	627.9	462	165.9	145.7	.43	.38
1987	606	159	17.3	782.3	518	264.3	224.6	.71	.60
1988 2/	562	220	40.0	822.0	440	382.0	314.1	1.75	1.44

1/ Includes deficiency, diversion, disaster, and storage payments.
2/ Preliminary.

in 1981, while cash costs per planted acre tended to rise slightly. Returns per bushel produced rose in 1988 with the help of payments provided by the Drought Assistance Act of 1988.

History of Oats Programs

Oats were not designated as a basic commodity in the Agricultural Adjustment Act of 1933 and other legislation and therefore did not receive direct support during the 1930's. However, indirect price assistance was received through price supports for corn, the major feed grain and a designated basic commodity. Oats first became eligible for direct support in 1945. The Secretary of Agriculture had discretionary authority to support oats prices in 1945-55 and 1958. Price supports for oats became mandatory with the Agricultural Act of 1956. Support was mandatory in 1956-57 and 1959-89. Prices were supported by loans in 1945-46, by loans and purchase agreements in 1947-63, and by loans and purchases in 1964-89. Government outlays for oats are minor compared with the other feed grains, wheat, and soybeans. Participation in Government programs by oats producers has never been very large because of large onfarm use of oats or lack of economic incentives.

Programs of the 1940's

During the 1940's, agricultural policy centered on high support rates to encourage production of agricultural commodities during and after World War II. The Steagall Amendment of 1941 gave the Secretary of Agriculture discretion to authorize price supports for nonbasic commodities at not less than 85 percent of parity. However, oats were not supported until 1945.

The Agricultural Act of 1948 continued mandatory price support at 90 percent of parity for the 1949 crops of wheat, corn, rice, peanuts used as nuts, cotton, and tobacco marketed before June 30, 1950, if producers had not disapproved marketing quotas. If funds were available, price supports were authorized for other commodities, including oats, at a fair relationship with other commodities receiving support.

The Agricultural Act of 1949 authorized price supports for basic commodities at 90 percent of parity through 1950. Support prices for nonbasic commodities, including oats, were generally set at lower levels during 1949 and 1950 than in 1948, whenever permitted by law.

Programs of the 1950's

The high support levels established in the 1949 Act were continued into the early 1950's. These high levels were justified based on food and fiber needs during the Korean war when most of the Commodity Credit Corporation-owned stocks acquired from the 1948 and 1949 crops were sold. Despite these high support rates, only a modest amount of oats went into Commodity Credit Corporation inventories.

The Agricultural Act of 1954 established commodity price supports on a flexible basis, from 82.5-90 percent of parity for 1955 and 75-90 percent thereafter, excluding tobacco. The transition to flexible support was to be eased by acreage set asides for the basic commodities.

Price supports for oats became mandatory with the Agricultural Adjustment Act of 1956. The support level was 76 percent of parity in 1956 and not less than 70 percent of parity in 1957. The Agricultural Act of 1958 set a price support for oats that would be fair and reasonable in relation to the support level for corn. Subsequent legislation affecting corn price support made the same proportional requirements for oats and other feed grains.

Programs of the 1960's

Low farm income, excessive production, and large Government stocks of grain were prevalent at the close of the 1950's. Emergency feed grain legislation was consequently enacted in 1961 providing higher support levels for farmers who voluntarily reduced acreage of corn and grain sorghum by 20 percent or more. The voluntary diversion programs of the 1960's were generally aimed at commodities such as wheat, cotton, corn, sorghum, and sometimes barley. Oats were not included. Direct payments were also made on some commodities, such as corn and sorghum, but not oats.

The Agricultural Act of 1965 permitted farmers with a history of oats or rye acreage to ask for an oats-rye base. Farmers participating in both the wheat and feed grain programs could substitute wheat on the oats-rye base after meeting a diversion percentage. The purpose of this program was to provide an opportunity to some farmers to increase wheat acreage from land that had been in oats or rye in the 1950's. This act covered the 1966-70 marketing years.

Programs of the 1970's

The Agricultural Act of 1970 introduced set asides but eliminated the need for the oats-rye base because wheat acreage was no longer constrained by an allotment. The act's feed grain program covered corn, grain sorghum, and barley if designated by the Secretary of Agriculture. The act also continued a two-tiered system of supports with minimum loan levels and an additional price support payment. Rye and oats farmers were eligible for loans but not price support payments.

The Agriculture and Consumer Protection Act of 1973, effective for the 1974-77 crops, emphasized holding down price increases and expanding production in response to rising world demand for food and fiber. A new concept of target prices was introduced to replace price supports, but oats were excluded. Target prices covered corn and sorghum and, if designated by the Secretary,

barley. The 1973 Act had no specific provision for oats other than mandatory price support loans.

The Food and Agriculture Act of 1977 mandated target price protection for corn and sorghum but made target prices optional for oats and barley. The target price level for sorghum and barley was established as a fair and reasonable rate in relation to corn. Target prices were based on costs of production. Oats were not designated for target price protection but were eligible for the 3-5 year farmer-owned reserve which provided separate loan rates and a reserve storage payment, initially set at $0.19 per bushel per year and later changed to $0.20. The act authorized a set-aside program, which was never implemented for oats during this period, if the Secretary of Agriculture determined that supplies were likely to be excessive. The set asides were to be based on a percentage of the farmer's acreage planted for harvest in that year. Under the 1973 legislation, set asides were based on a percentage of allotment.

Programs of the 1980's

The Federal Crop Insurance Act of 1980 terminated most disaster payments, expanding the Federal Crop Insurance Program with subsidized payments instead. Additional price support was provided and the farmer-owned reserve was made more attractive. Loan rates to farmers in the reserve were raised above the regular loan rate. For example, the regular oats loan rate was $1.16 per bushel and the reserve loan rate was $1.23 per bushel. The regular corn loan rate was $2.25 per bushel and the reserve loan rate was $2.40 per bushel.

The Agriculture and Food Act of 1981 was prepared in a time of great concern over export embargoes, farm income, and the effect of price support policies on farm structure. The cost of the act was also a concern because of growing Federal deficits. Thus, a goal was to reduce the role and expense of Government in agriculture. The two-tiered system of target prices and loans was continued for designated crops, including oats for the first time, along with acreage controls and the farmer-owned reserve. The tie between target prices and inflation rates was broken and specific levels, lower than farm interests wanted, were mandated for each year, 1982-85. Target prices for oats were $1.50 per bushel in 1982, increasing to $1.60 by 1985. The act authorized the Secretary to raise target prices to meet rising production costs and to require farmers to place a certain percentage of a crop's base acreage into conservation uses in order to qualify for price and income supports. The act also gave the Secretary discretion to adjust interest charges and storage payments to encourage participation.

Legislation from 1982 and beyond was aimed at reducing feed grain supply, but oats supplies for most years were already at low levels. The 1982 feed grain crop had a voluntary acreage reduction program of 10 percent. For 1983 the oats crop had a 10-percent voluntary acreage reduction program and another 10-percent optional diversion program. USDA announced a payment-